Caritas Good Samaritan Occupational Health Services

MA Dept. of Corrections Pre-employment/Post Offer
Physical Abilities Test Rationale

Job Descriptions: Corrections Officers and Correctional Program Officers

Purpose of Test:

Correction Officers and Correctional Program Officers are responsible for the supervision and management of adult inmates. Management of these inmates can involve highly physically demanding tasks such as: physical restraint, self defense during an assault, breakup of fights and riots, and extrication of incapacitated inmates in emergency situations. Physical demands at this level are classified as Extra Heavy Physical Demand Labor under the Dictionary of Occupational Titles published by the U.S. Department of Labor. Due to the life safety issues involved in performing the essential functions of these job catgories, all new applicants must demonstrate sufficient endurance, strength, flexibility, and cardiovascular fitness to safely meet the physical demands of the essential functions of the job.

The Physical Abilites Test is designed to simulate actual emergency situations that occur on the job. Items 1 through 8 of the test are performed in an obstacle course format, progressing through the sequence of test items in a continuous manner. Heart rate is monitored throughout the obstacle course portion, with maximum cardiovascular tolerance defined by the Maximal Training Heart Rate (MTHR) of 90% utilizing the Karvonen formula[1]. 90+% is commonly recognized as above the Anaerobic Threshold, the point at which the body has insufficient oxygen and can no longer effectively remove lactic acid from the muscles[2]. If an applicant exceeds MTHR during the performance of this work simulation, the applicant has demonstrated they have insufficient cardiovascular reserve and would therefore be a risk to themselves and others in actual emergency situation on the job.

Rationale for specific test procedures:

1. <u>Run on treadmill 6 minutes at 5 mph</u>

Corrections Officers must frequently respond to emergency situations (at some facilities, as frequently as two times per day), usually described as “codes”. These codes can involve fights among inmates, or an assault on an officer, or a medical emergency involving an inmate. Certain codes require only a response from officers in the direct vicinity. Other codes require responses from officers throughout the facility, including those at the opposite corner of the campus. Officers must be able to run quickly from one end of the campus to the other and still have sufficient strength and cardiovascular endurance to respond to the emergency situation. A half mile run at a pace of 5 mph is equivalent to a 12 minute mile pace. It is anticipated that officers should be able to respond quicker than within 6 minutes to the half mile distance to the other side of the campus. But, this pace is chosen as a reasonable demand for pre-placement purposes.

2. <u>Up/down 12 in. step at 24 steps (up, up, down, down)/min. for 3 mins.</u>

Buildings within the correctional system frequently include at least four stories (as many as six stories). If an officer is at the top floor of one building and must respond to a code on the top floor of another building, he or she must be able to rapidly descend six stories of steps, run to the other building, and ascend the six stories of the building calling the code. At 12 steps per story, 24 steps per minute for three minutes, is the equivalent of ascending and descending six stories.

(Note: A comparable cardiovascular endurance test is utilized by similar employers such as U.S. Border Patrol[3].)

3. Lift and carry 85 pound mannequin 100 feet.

Removal of unresponsive inmates or officers from an emergency situation can require an officer to participate in lifting and carrying an individual. For the purposes of this test, the work simulation scenario involves two officers carrying a 170 pound adult out of a building. (During data collection at Cedar Junction, staff reported they have done this task numerous times with an individual weighing 240 pounds). Each officer is therefore required to lift and carry half the unresponsive person's body weight, 85 pounds. This weight level is chosen (as opposed to the higher weight of 120 pounds, half of 240 pounds) as normative data published by Snook and Ciriello[4] reports 86 pounds as the 50th percentile for adult males as the reasonable expectation for long distance carrying.

4. Drag 185 pounds on sheet, 25 feet.

If an officer must remove an unresponsive adult from an emergency situation, and does not have a second officer to assist with a lift and carry, the officer must remove the individual from the situation by dragging the individual grasping under the shoulders, or dragging them on a sheet. Dragging 185 pounds on a cotton sheet, on a concrete or vinyl tile floor, requires approximately 50 pounds of horizontal force, as measured by a Chatillon dynamometer. This force range is within normal limits for adult males as documented by Snook and Ciriello[4].

5. Sled push/pull with 70 lbs. horizontal force, (120 lbs. in sled), 40 feet, 5 reps, in 120 secs.

Cell extraction of uncooperative inmates requires that officers enter a cell as a team, utilizing a plastic shield to push the inmate into the corner of the cell. Officers then must grapple with the inmate to secure all four extremities and then apply passive restraints. This task (which is performed frequently at some facilities) requires continuous pushing and pulling with the upper body, as the inmate is grappled into a restrained position. Pushing and pulling forces at the 50th percentile for adult males are documented as approximately 70 pounds of horizontal force for adult males by Snook and Ciriello[4]. Officers should be able to exert at least average upper body strength for pushing and pulling to be able to participate in performing this essential function of the job. Pushing and pulling of a weighted sled is utilized to simulate the sustained forces required to complete this job task.

6. Maximum lift floor to waist level 110 pounds, 5 repetitions, < 30 seconds.

During restraint procedures, and after application of restraints, uncooperative inmates are frequently lifted, or moved, from their positions on the floor. Lifting of an adult male can require application of lifting force from floor to waist level of 110 pounds or more. 110 pounds is selected for this test as this is the normative 50th percentile for adult males lifting floor to waist as documented by Snook and Ciriello[4].

7. Maximum lift floor to elbow level 80 pounds, 5 repetitions, < 30 seconds.

Once uncooperative, restrained inmates are lifted from floor to waist level, they are then raised to the standing positon. Performance of this task can require 80 pounds or more of lifting force from waist to elbow level. 80 pounds is selected for this test as this is the normative 50th percentile for adult males lifting floor to chest level as documented by Snook and Ciriello[4].

8. Pass through 17 inch passageway.

Access to service areas of detention unit cells is frequently required by officers when uncooperative inmates seek to overflow toilets or cause other damage to the cells. Water and power shut off to the cells is accessed through a passageway behind cells which is 17 inches in width. It is essential that officers be able to safely enter and exit this passageway to access controls involved in ensuring inmate safety during occurrences of water flow or power hazards

9. Assume sustained stoop (60 degree trunk flexion) position for 60 seconds.
Inmates who are at risk of harming themselves or others must sometimes be secured in four point restraints. Application of four point restraints requires that officers must bend at the waist for minutes at a time to secure the restraints. Safety policies also require that restraints be checked periodically to make sure they are not imparing circulation to the inmates extremities. Checking the restraints also requires frequent bending at the waist.

10. Assume sustained crouch/squat position for 60 seconds.
Inmates being transported to and from court appearances, or being transported to another facility, must be secured with leg shackles. Officers participating in transportation typically shackle a number of inmates in a brief period of time, to prepare them for transport as a group. Performing this task can require frequent or continuous squatting for the officer.

11. Assume sustained bilateral kneel on vinyl tile (or concrete) position for 60 seconds.
Depending on the location and amount of space available, shackling of inmates can also require frequent or sustained kneeling by the officer, to secure the shackles.

References

1. Karvonen MJ, Kantala E, Mustala O. The effects of training on heart rate. Acta Medica Exp Fenn 1957; 35:308-315
2. Fitness Heart Rate Zones. www.fitzones.com/members/Fitness/heartrate_zones.asp.
3. CBP Border Patrol Fitness Test; www.cbp.gov/.../careers/customs_careers/**border**_careers/bp_**agent**_**fitness**/bp_**agent**_fit.ctt/bp_**agent**_fit.pdf.
4. Snook, Ciriello: The design of manual handling tasks: revised table of maximum acceptable weights and forces. Ergonomics, 1991, vol. 34, no. 9, pp. 1197-1213)